

## Indian Health Service (IHS) Office of Environmental Health and Engineering (OEHE)

The OEHE is composed of five divisions that provide support for IHS Headquarters, each of the 12 IHS Areas, all IHS service units and many tribal programs in the following areas:

- Division of Facilities Planning Construction (DFPC)
- Division of Facilities Operations (DFO)
- Division of Sanitation Facilities Construction (DSFC)
- Division of Engineering Services (DES)
- Division of Environmental Health Services (DEHS)

### Division of Sanitation Facilities Construction (DSFC)

- The Sanitation Facilities Construction (SFC) Program provides technical and financial assistance to American Indian Tribes and Alaska Native Villages for cooperative development and construction of safe water, wastewater, and solid waste systems and related support facilities.
  - See attached program Fact Sheet
- Program goals on Hopi – eliminate water and sanitation deficiencies, which include:
  - Many homes on Hopi still do not have water and wastewater services in the home (people haul water and use outhouses)
  - Water quality is not EPA-compliant for some systems
  - Water and sewer infrastructure of some systems have deficiencies
  - Provide Technical Assistance to utilities on day-to-day issues
- Staff: 2 Environmental Engineers, 2 Engineering Technicians
  - Informational Receptionist currently selected, but vacant until start date
  - Additional support from District and Area Office personnel as needed
- Project Data System (PDS) stores data about important facts and milestones of all sanitation facilities projects constructed under authorization of Public Law 86-121.
  - Active IHS Projects: \$10,456,630
    - “Active” means that a Final Report has not been published
  - Inactive IHS Projects: \$41,923,156.03
    - Dates back to 1962
  - Total IHS Projects to-date: \$52,379,786.03
  - See attached PDS listing
- Sanitation Deficiency System (SDS) tracks identified needs for new or improved sanitation facilities for existing homes of American Indians and Alaska Natives. IHS uses SDS to allocate annual Congressional appropriations known as “Regular” funding. It is also used by other Federal agencies, including the Environmental Protection Agency, to confirm needed projects and/or select projects for funding.
  - Current Hopi SDS Projects: \$40,102,999

- Many of the projects cannot be funded due to various reasons:
  - No land access (e.g. no permission from Village)
  - No Preliminary Engineering Report (PER)
    - Including lack of documentation of significant health deficiency
  - No enforcement of open dumping ordinances to prevent future dumping
  - Project has too large of a cost (e.g. HAMP at \$14.7M)
  - Projects do not competitively score highly with respect to other projects in other Villages or Tribes
    - Largely due to high capital costs per home associated with rock excavation and large distances between homes
- See attached SDS listing

#### DSFC Ongoing Projects

- Hopi Arsenic Mitigation Project, HAMP (\$6,530,000 funded, \$14,735,000 unfunded: PH 04-S63, PH 06-D33, PH 08-T38, PH 10-E37, PH 11-E55, PH 12-E73, PH 14-U62, and PH 15-E89)
  - [Placeholder]
  - \$200,000 Shungopavi Village Contribution from Abandoned Mine Lands (AML) under PH 15-E89
    - Anticipated for construction in 2018, regardless of rest of HAMP funding status
- Individual Water and Sewer services on the Hopi Reservation (\$765,738: PH 15-U69, PH 16-F24, and PH 17-F37)
  - [Placeholder]
  - [Placeholder] anticipated for construction in 2018
  - Encourage Council Reps to let members know to apply for services through their Village process
- New Upper Moenkopi N-Aquifer Well Construction (\$627,000: PH 15-U77)
  - Two new wells planned to be drilled in Pasture Canyon and connected to existing infrastructure
  - Hydrogeologic study final report produced by D.B. Stephens & Associates to select well locations and develop specifications for well drilling and construction
- Bacavi Water System Improvements (\$314,000: AZ09961-0601)
  - Likely to-be funded as an AML project
- Sipaulovi/Mishongnovi Wastewater Study (\$150,000: PH 10-T88)
  - Evaluating alternatives for funding water and wastewater projects for Shungopavi, Sipaulovi, and Mishongnovi homes on top of Second Mesa
  - Archaeological and biological clearance requests pending for conducting soil profiles at homes and potential lagoon sites
  - Preliminary sewer designs to be developed using recently collected survey data

- Solid Waste Planning Effort (AZ09999-0902 Hopi Solid Waste Landfill, AZ09999-0905 Hopi Open Dump Closures)
  - Requested \$211,000 in planning funds in SDS for FY2018 to develop alternatives and costs
  - Goal of planning effort is to develop Integrated Solid Waste Management Plan for selected Solid Waste Program alternative
- Shungopavi Line Q (\$481,000: PH 15-U72)
  - Three honey bucket dump stations in the Village Plaza area and connect 8 homes to the newly constructed lift station
  - \$100,000 Village Contribution
  - Completed most construction and the 8 homes are online
- Kykotsmovi Sewer Rehabilitation (\$883,000: PH 10-U01)
  - Prepared drawings and specifications to procure a Closed Circuit Television (CCTV) evaluation and report of the wastewater collection system
  - Planning and designing rehabilitation to construction document phase using the CCTV findings and consulting with the Utility
  - Prepared design package to 50 percent per IHS Phoenix Area Guidelines
  - Anticipated for construction in 2018
- Upper Village of Moenkopi Sewer Rehabilitation Phase 1 (\$530,433: PH 09-T46)
  - Designed and constructed a scope of work to optimally address as many issues (i.e. constructability, rock, archaeological/cultural issues, utility needs, proximity of existing facilities, immediate impact, future impact, flexibility for future facilities, magnitude of deficiencies, etc.) as possible within the project budget for Phase 1.
  - Designed Phase 2 of the project including a Preliminary Engineering Report (PER), which resulted in funding of \$1,061,000 under PH 17-U99
    - \$270,000 Village Contribution
    - Anticipated for construction in 2018
- Kykotsmovi Village and First Mesa Consolidated Villages Proposed Water Storage Tanks (\$1,606,000: PH 12-U31 and PH 15-U76)
  - Worked with Kykotsmovi Utility to determine proposed 200,000 gallon water storage tank location after ruling out several locations due to technical, realty, and archeological issues
  - Prepared construction documents to 50 percent per IHS Phoenix Area Guidelines
  - Anticipated for construction in 2018

#### DSFC Recently Completed Projects (Last Four Years)

- First Mesa Consolidated Villages Mesa Top System Improvements (\$518,000: PH 06-D25, PH 08-D71)
  - Facilities provided include: 584 feet of insulated pipe on exposed areas of cliff face, 1,000 feet of 4-inch water main, 8,500 gallon welded stainless steel water

tank, overflow discharge structure, new electrical controls, telemetry, and pumphouse piping in order to provide a more energy efficient and utility-friendly facility

- Completed and distributed a Final Report
- Individual Water and Sewer Services on the Hopi Reservation (\$2,021,500: PH 07-T17, PH 08-D69, PH 09-E03, PH 09-T42, PH 10-T89, PH 12-E61, and PH 14-F10)
  - Provided individual water and sewer facilities to 58 homes (almost entirely first service) across the Hopi Reservation including: 16 community water main extensions of varying sizes, 34 homes served off of community water distribution systems, 9 homes served with onsite cistern systems, 8 community sewer main extensions of varying sizes, 28 homes served off of community wastewater collection systems, 23 homes served with onsite septic tank and drainfield wastewater systems, 1 home served off of community wastewater collection system with a septic tank and small-diameter variable grade gravity sewer service line, 2 homes served with individual grinder pumps, and 11 homes served with in-home plumbing (7 medical referrals)
  - Rehabilitated the Toreva Lagoon which serves Upper Sipaulovi and Upper Mishongnovi
  - Coordinated with the IHS District Utility Consultant (DUC) to provide O&M equipment to the Village Utility Management Cooperative for use across the Hopi Reservation
  - Completed and distributed a Final Report for PH 09-E03, PH 09-T42, PH 10-T89, and PH 12-E61
- Hopi Tribal Housing Authority Sewer Replacement (\$98,000: PH 14-E92)
  - Coordinated with the Housing Authority and Hopi Tribe to enter a Memorandum of Agreement and garner funds from the Housing Authority in the interest of completing similar scopes of work in the future
  - Installed sewer facilities to four homes with failed drainfields
- Village of Moencopi (Lower) First Service Homes and Honey Bucket Dump Station (\$323,000: PH 07-T19).
  - Facilities provided include: first service water, sewer, and plumbing to five homes with surface sandstone throughout the project area including: 210 feet of 2-inch water main, 640 feet of 8-inch gravity sewer main, 4 manholes, 1 road crossing, and erosion control/aesthetic measures
  - Designed and constructed service to five homes requesting service for the first time, setting a precedent as the first water and sewer services to homes in the Lower Village
  - Designed and constructed a honey bucket dump station to provide residents a sanitary method of wastewater disposal, which has been shown to be in regular use by a significant amount of the residents based on results of a recent IHS Division of Environmental Health Services and Hopi Tribal Community Health Representatives survey

- Completed and distributed a Final Report and record drawings for facilities provided
- Kykotsmovi Village and Sipaulovi Village Water Storage Tank Rehabilitation (\$200,000: PH 05-D04)
  - Facilities provided include: Recoating and upgrades to two 75,000 gallon welded steel water storage tanks with new yard piping for each facility
- Village of Bacavi WWTP rehabilitation, wastewater collection system rehabilitation, and wastewater collection system expansion (\$1,540,000: PH 03-S53, PH 06-D31, PH 06-T03, and PH 09-E04)
  - Facilities provided include: 13,350 feet of gravity sewer including service connections to existing homes with significant sandstone excavation throughout the project area, 48 manholes, 3 individual grinder systems, 1 community grinder station, 1,900 feet of sewer force main, 5 roadway crossings, draining and drying of existing lagoons, and Cast In Place Pipe rehabilitation of 2,200' of existing gravity sewer
  - Provided O&M equipment (backhoe, utility truck, parts, etc.) and training to the Village
  - Completed and distributed a Final Report and record drawings for facilities provided
- Shungopavi Sewer Expansion and Lift Station (\$888,000: PH 08-T35)
  - Facilities provided include: water and sewer services to 18 homes with significant sandstone excavation throughout the project area including: 3,891 feet of 8-inch gravity sewer main, 12 manholes, 2 road crossings, 18 sewer service lines, 5 water service lines corresponding to first service homes, 4 homes plumbed, and a lift station
  - Completed and distributed a Final Report, O&M Manual, and record drawings for facilities provided
- Shungopavi Lagoon expansion (\$491,670: PH 09-T61)
  - American Recovery and Reinvestment Act Project
  - Facilities provided include: one acre secondary percolation cell with lining system, transfer piping, and fencing
  - Completed and distributed a Final Report and record drawings for facilities provided
- First Mesa Consolidated Villages Emergency Flooding (\$540,415: PH 10-X02, and PH 11-E92)
  - Facilities provided include: 427 feet of 10-inch water main, 100 feet of 10-inch wash crossing, 3,225 feet of 8-inch gravity sewer main, 10 manholes, fencing, erosion control measures, pump and motor replacements for three wells, pressure reducing valve and vault, lagoon dredging, and demolition of two water storage tanks compromised during flooding

- Completed and distributed a Final Report and record drawings for facilities provided
- Assisted closure between the Hopi Tribe and Department of Housing and Urban Development for Imminent Threat Grant B-09-SR-04-2509